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# M E M O R A N D U M

**DATE:** **July 23, 2012**

**TO:** **Ms. Rose Longoria, Yakama Nation Fisheries Program**

**FROM:** **Colin Wagoner and Bob Dexter**

**SUBJECT:** **Preliminary Comments on the Draft Feasibility Study Portland Harbor Superfund Site (March 2012)**

As you know, EPA is considering how to respond to the Lower Willamette Group on the draft Feasibility Study (FS) report. They are weighing whether to provide detailed comments on the FS or to provide more general comments on the usability of the analyses used to prepare the report. EPA is interested in receiving high level responses from the government review team concerning which portions of the analysis may be usable and which ones are not. This letter is intended to provide you with our preliminary high level responses.

**Adequate and Appropriate Evaluations**

The FS includes a number of sections that provide useful information that may allow the remedial process to move forward without major new efforts.

- The technical and cost evaluations for the different remedial technologies that make up the core approaches were reasonably well done and applicable to the site, even if the specific suggestions for their use in the FS may not appropriate.
- The mapping the locations and extent of the concentrations in the sediments of key COPCs that exceed preliminary remedial action limits (RALs) is useful in providing a preliminary identification of the sediment management areas (SMAs.) The most appropriate boundaries of those sites, e.g., based on differing remedial action levels (RALs), was not established.
- The FS analyzes the sediment contamination data in ways that are useful for prioritizing the effectiveness of remediating the SMAs in reducing risks, based on the concentrations and estimated volumes of contaminated sediments present in the different SMAs.

**Sediment Transport Model and Natural Recovery Predictions**

The evaluation of the effectiveness of the remedial alternatives is based in large part on the results of the fate and transport model. The model simulates the erosion, transport, and deposition of sediment-associated contaminants within the study area. The model predicts that many portions of the study area are depositional such that given enough time, the risk to benthic receptors, and thus fish and people will decline as relatively less contaminated sediment from upstream of the site buries more contaminated sediment. While this process is likely to occur, there is substantial uncertainty in the predictions regarding where and at what rate. Among the major issues, the predicted sedimentation seems to be much greater than is consistent with the observed data. The model predicts such high rates of deposition in most areas that it supports the conclusion that all of the alternatives, including no action, are similarly effective, which supports LWG's preference for less aggressive alternatives. The model is still being vetted by

EPA, and the model may be further adjusted and calibrated/verified, to yield different results with less deposition. Given the present uncertainties, the most protective approach is to assume that there is no deposition of clean sediment. I***n any case, we recommend not accepting the current sediment transport modeling or the associated predictions of the effectiveness of the alternatives.***

**Site Wide Average Concentrations**
The FS uses site-wide average concentrations (SWACs) as a primary measure of remedy effectiveness. For any given chemical, the average concentration is calculated over the entire 11-mile study area. This approach lumps together high concentration data from known nearshore areas with lower concentration data from those areas between source areas as well as data from the navigation channel. Using a SWAC makes the site look more acceptable under existing conditions and downplays the risk reduction associated with cleaning up even the most contaminated areas. Additionally, the SWAC obscures the importance of cleanup in moderately contaminated areas. **Alternatively, we recommend calculating risk reduction independently for each side of the river, using sliding average concentrations to determine the extent each of the sediment management areas (SMAs) that exceeds applicable risk thresholds.**

**Risk Reduction Evaluation**
The draft FS relies on remedial action goals (RALs) that were developed some time ago. These RALS are useful for identifying priority areas and establishing a first delineation of the extent of those areas that need to be remedies. However, the FS did a limited job of addressing the risks to human and natural resources that were identified in the risk assessments. It is not clear to what extent all risks from all substances will be eliminated by the proposed remedies. **We recommend that the FS or Proposed Plan include discussions of the risks identified in the risk assessments, and estimate the effectiveness of each remedy in addressing each of those risks.**

**Remedy Duration**
The FS assumes that the extensive dredging inherent in the more aggressive remedies, such as Alternative F, will take up to 28 years to implement. The length of this remedial schedule is likely to make this alternative seem untenable to the public and others. The schedule is driven by assumptions of construction rates and the fish window such that the amount of work that can be completed in a calendar year is quite limited. The difficulties with these estimates are further compounded because the FS takes the approach that sites need to be remediated starting with the upriver sites and moving consecutively downstream upon completion of the completion of the upstream site. This scheduling means that many highly contaminated areas would not be remediated for years. **We recommend using higher estimates of production rates and longer work windows, based on the assumption that the Services will allow work to proceed more rapidly to achieve the benefit of removing contaminants from the river.**

**Cleanup to Background**
Remedial Alternative G was developed to evaluate cleanup to “background” concentrations for chemicals including PCBs. However, LWG dropped the alternative relatively early in the FS because, according to the natural recovery assumptions in their analysis, it did not offer any benefit relative to Alternative F. We view this as a biased analysis because, as mentioned previously, it seems that the models over-predict the amount of deposition that is occurring in

the study area. **We recommend that a target of cleaning sediment to background be retained in the FS and or in the Proposed Plan.**

**Integration with Upland Source Control**

The effectiveness of the sediment remedy will be closely tied to the effectiveness of upland source control efforts. There should be a more complete evaluation and analysis of how these efforts will be integrated. We recognize that this is a very challenging technical issue that may require a significant monitoring and adaptive management effort. It should also enter into decisions on implementation schedules for both upland and sediment remedies. **We recommend that the integration of the upland/sediment remedies be discussed in detail in the FS and or in the Proposed Plan.**

**Elimination of Toxic Releases to the Columbia River**

Contaminated sediment has been and continues to be a source of contamination to the Colombia River that is or has the potential to impact natural resources that are protected under Treaty between the US Government and the Yakama Nation. The FS should for both upland and sediment remedies. **We recommend that the long-term effectiveness of the alternatives are evaluated based on their ability to control releases from the site that might be transported to the Columbia River.**